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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,313	06/12/2000	SHUNJI KAMIJIMA	105955	7075

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OLIFF & BERRIDGE
P O BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

KANG, JULIANA K

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 01/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,313

Applicant(s)

KAMIJIMA ET AL.

Examiner

Juliana K. Kang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 27 is/are rejected.
- 7) ☒ Claim(s) 25 and 26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt of papers submitted under 35 U.S.C. §§ 119 (a)-(d) from the International Bureau is acknowledged in this national stage application, which papers have been placed of record in the file (PCT Rule 17.2(a)).

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim Objections

- withdraw*
✓
3. Claim 24 is objected to because of the following informalities: Claim 24 recites the limitation "said first mold" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Specification

4. The disclosure is objected to because of the following informalities: On page 19 line 17, the reference number 111 should be corrected to read 110.

Appropriate correction is required.

Applicant's assistance is requested to correct any other errors that may be noticed in the application.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stern (U.S. Patent 5,771,321).

Regarding claims 1-4, 11-13, Stern discloses an array of micromechanical optical switches for use in an image display device comprising; a first microstructured portion (26, 56, 58), and a second microstructured portion of a predetermined shape 28, the second microstructured portion being driven by the first microstructured portion. Stern further discloses that the second microstructured portion is made by many processes such as stamping, rolling or etching process (see column 45 lines 51-58). Thus, even though Stern does not disclose the second microstructured portion formed by mold transfer, it would have been obvious to one with ordinary skill in the art to use molding

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as an alternative process to form the second microstructure portion as an alternative design choice.

Regarding claim 5, Stern further teaches a third microstructured portion 48 of a predetermined shape not driven by the first microstructured portion, at least a part of the third microstructured portion which relates to the second microstructure portion being formed by mold transfer (see column 44 lines 52-67).

Regarding claims 6 and 16, Stern shows electrodes 47 placed between the second microstructured portion and the third microstructured portion, thus, there is a gap between the two (see Fig. 4A).

Regarding claims 7 and 17, Stern teaches the photolithography technique (see column 37, lines 5-10).

Regarding claims 8 and 9, Stern teaches using a UV-curable glue (resin) (see, column 46 lines 42-46).

Regarding claim 10, Stern shows a metallic material 47 disposed between the first and the second microstructured portions.

Regarding claim 15, Stern teaches using a same mold for the first and third microstructured portions (see Fig. 18A).

Regarding claims 19-20, 23-24 and 27, Stern teaches claimed method steps including molding, applying layers for etching, planarizing in Figs. 17A-18E.

Regarding claim 21, Stern teaches the claimed planarizing step (see column 38 lines 44-57).

Regarding claim 22, Stern teaches the claimed mold formed on a silicon substrate by various etching.

Allowable Subject Matter

6. Claims 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art documents submitted by applicant have been considered and made of record (note the attached copy of form PTO-1449).

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takeuchi et al (U.S. Patent 6,323,833 B1) shows a display device using movable actuators to cause the light leakage in waveguide at each display elements (see Fig. 1). Ford (U.S. Patent 6,212,314 B1) shows an integrated opto-mechanical apparatus (see Fig. 3). McMillan et al (U.S. Patent 6,160,230) shows a micro-electrical mechanical switch. Sakai et al (U.S. Patent 6,057,636) shows a micro power switch. Khoury et al (U.S. Patent 6,218,203 B1) shows a microfabrication technology including a photolithography technology. Welbourn et al (U.S. Patent 5,262,000) shows a method for making a micromechanical switch.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (703) 305-6259. The examiner can normally be reached on Mondays and Thursday 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-3072.


Juliana Kang
January 14, 2002


Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800